

# Assessing Internal Controls among Insurance companies in Ghana

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# ASSESSING INTERNAL CONTROLS AMONG INSURANCE COMPANIES IN GHANA

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## Abstract

*This study assessed the internal controls system in the insurance companies in Ghana. Data were collected from internal auditors in the insurance industry in Ghana and in total, 91 questionnaires were successfully administered. The study employed multivariate analysis of variance (MANOVA) as the analytical tool.There was a statistically significant difference among categories of insurance companies on the combined dependent variables (internal control variables-Control Activities, Monitoring, Information and Communication, Control Environment, and Risk Analysis). When the results for the dependent variables were considered separately, the variables that contributed to the statistical significance are the Control Activities, Monitoring, Control Environment and Risk Analysis.The study recommended that National Insurance Commission should organise seminar on effective implementation of internal controls for the insurance companies in Ghana with much focus on brokerage reinsurance, reinsurance and lost adjusters companies.*

**Keywords: Internal Control Variables, Categories of insurance companies and MANOVA.**

## Introduction

In the corporate world, organizations face external and internal forces that call for a plan to help them continue to be relevant and competitive (Chebungwen & Kwasira, 2014). Management's ability to accomplish its goal with respect to remaining relevant and competitive rests largely on the policies as well as the effectiveness of procedures established to safeguard its operations. Emanating from the agency theory and buttressed by the contingency theory is internal control system (ICS) which ensures effective management of resources in addition to effective and efficient operations (Jokipii, 2009). Owing to the dynamic nature of business environment, organizations must extensively structure their internal controls in order to safeguard continuous increase in returns (Ndungu, 2013).

Internal control systems are systems made up of procedures and policies that help safeguard a company's assets, provide trustworthy financial reporting, enhance compliance with rules and regulations, and achieve efficient and effective operations (Mugo, 2013). These systems of procedures and policies, according to Gray and Manson (2011) are usually associated with external and internal communication processes of an organisation, as well as procedures for managing corporate finance, the preparation of accurate and reliable financial reports on a timely manner, and the maintenance of inventory records and properties.

The framework for internal control system developed by Committee of Sponsoring Organization of Treadway Commission [COSO], argues that every sound system of internal control must have five components namely: control environment, risk assessment, control activities, information and communication and monitoring of internal control activities. To

achieve it overall purpose, internal control is dependent on how effective each of its elements functions and how well they are coordinated and integrated with each other (DiNapoli 2007).

In Ghana, companies in the insurance industry are regulated by the National Insurance Commission. The object of the Commission is to ensure effective administration, supervision, regulation and control the business of Insurance in Ghana. The NIC requires companies in the sector to put in place sound systems of controls and adopt good corporate governance practice as well as establish a risk management strategy and policy. Despite the substantial growth in the sector over the years, the National Insurance Commission's (2014) report point out that the industrial average growth rate in gross premiums and commissions dropped from 35.3% to 23.6% and 33.6% to 26.2% respectively between 2012 and 2013 fiscal years. As a result the commission has entreated the industrial players to continually strengthen their internal control mechanisms.

However, the report submitted by the commission did not disclose which group in the industry has not been doing well with respect to implementation of internal control procedures which is presumed to have resulted in the poor industrial performance over the 2012 and 2013 fiscal years. Besides, the report of the commission did not also disclose which group in the industry has been doing well with respect to implementation of internal control procedures. This study sought to assess the internal controls in the insurance companies in Ghana by finding out whether the scores on internal control variables are the same across the various groups of insurance companies in Ghana.

**Objectives of the study**

The general objective of this study is to assess internal control systems among companies in the insurance industry in Ghana.

## Hypothesis

In achieving the above objective, the following hypotheses were formulated:

**$H_0$**: the scores on internal control variables in insurance companies in Ghana are the same.

**$H_1$**: the scores on internal control variables in insurance companies in Ghana are not the same.

## Methodology

The methodology comprises discussions on the study area, target population, sampling procedures and data analysis.

## Study area

The scope of the study is limited to companies in the insurance industry in Ghana. Per the 2012 census it was reported that the country has a total population of around 25 million, of which 51% were females, and 49% males (Ghana Embassy, 2015). In Ghana the insurance industry, according to the NIC (2013), is made up of 18 life insurance companies, 25 non-life insurance companies, 3 reinsurance companies, 58 brokerage companies, 1 loss adjuster and 1 reinsurance broker, and 4537 insurance agents.

## Target population

The target population of the study comprised all companies in the insurance industry for the year 2013, using audit directors, audit manager or audit seniors, as a means of obtaining data

for the study. This was because these executives are responsible for independent evaluation of systems of control.

**Sample and sampling procedure**

Copper and Schindler (2011) submit that the most important thing taken into consideration is that the sample size drawn from the population must be representative so as to allow the researcher make inferences or generalisations from the sample statistics to the population understudied. Based on Krejcie and Morgan's (1970) table for determining sample size for a given population as cited in Sarantakos (2005), a sample size of 80 was selected from the population to represent a cross section of the population. The authors then adopted stratified and simple random sampling techniques in selecting the sample. This was to ensure that each category was given equal chance of being selected. The proportionate sampling was then used to select the number of respondents from each stratum out of the entire population.

Given the wide variations in the sample sizes as a result of the disparities in the number of firms per category oversampling was resorted to. Oversampling signifies the application of bias to deal with disproportionate samples by capturing the whole population of essential units which are few in a given overall population (Rahman & Davis, 2010). The sample size that was drawn from non-life was increased by 6 and that of life and reinsurance was also increased by 4 and 1 respectively.

Next, the simple random sampling technique was used to select the individual respondents for the study. The respondent comprised audit directors, audit managers or audit seniors of various companies in the insurance industry who are responsible for independent evaluation of internal control systems.

**Measurement of variables and Data analysis**

The internal control variables were measured using likert type scale. The items on the scale were adapted from the instrument developed by Bureau of Financial Monitoring and Accountability of Florida Department of Economic Opportunity (DEO) (2014). The DEO 2014 instrument was based on variables in COSO 2013. Data collected was analysed quantitatively using Multivariate Analysis of Variance (one-way MANOVA) as the analytical technique.

**Result and Analysis**

This section discusses the findings of the study in relation to the objective. It presents discussion on the demographic characteristics of respondents using descriptive statistics including frequencies, percentages tables and graphs. It proceeds with the assessment of control environment in the various categories of the insurance companies. Assessment of the control environment is done using MANOVA.

**Demographic Characteristics of Respondents**

The survey conducted revealed that seventeen (17) out of ninety-one (91) internal auditors who took part in the study representing about 18.7% of the total respondents said their companies were life insurance companies, twenty-six (26) out the total number of the internal auditors representing about 28.6% of the respondents said their companies were non-life insurance companies, forty three (43) of the internal auditors who took part in the survey representing about 47.3% of the respondents said their companies were brokerage companies, one (1) of the respondents representing about 1.1% of the total respondents said the company was reinsurance brokerage while another one of the respondents representing about 1.1% of the respondents said the company was lost adjuster company and finally, three (3) of the internal

auditors representing about 3.3% of the total respondents said their companies were reinsurance companies. This shows that majority of the internal auditors (47.3%) that took part in the study work in non-life insurance companies in Ghana. The above distribution is shown on Table 1.

**Table 1: Category of Insurance Company**

| Categories of Insurance Companies | Frequency | Percentage |
|---|---|---|
| **Life** | 17 | 18.7 |
| **Non – life** | 26 | 28.6 |
| **Brokerage** | 43 | 47.3 |
| **Reinsurance brokerage** | 1 | 1.1 |
| **Lost adjuster** | 1 | 1.1 |
| **Reinsurance** | 3 | 3.3 |
| **Total** | **91** | **100.0** |

**Source: Survey data, 2015**

Age of the respondents is one the most important demographic variable that the survey sought to capture. Normally, age of a respondent influences his or her reasoning ability. Profiled by age, the maximum age of the respondents was fifty-three (53) years while the minimum age was twenty-six (26) years. The median age of the respondents was thirty-three (33.00) years (mean, 36.37) with the corresponding inter-quartile deviation being six (6.00) (standard deviation, 8.001). Figure 1 shows the age distribution of the respondents who took part in this study. It can be seen from Figure 1 that thirty (30) out of ninety-one (91) internal auditors who took part in the study representing about 30% of the total number of the respondents fall within the age category below thirty (30) years. Thirty-four (34) of the internal auditors representing about 34% of the total respondents were within the age category of 31 – 40 years, all inclusive.

Within the age category of 41 – 50 years, all inclusive were twenty internal auditors (20%) while seven (7) out of the 51 years and above. The age distribution shows that majority of the respondents who took part in this were between the ages of 31 – 40 years.

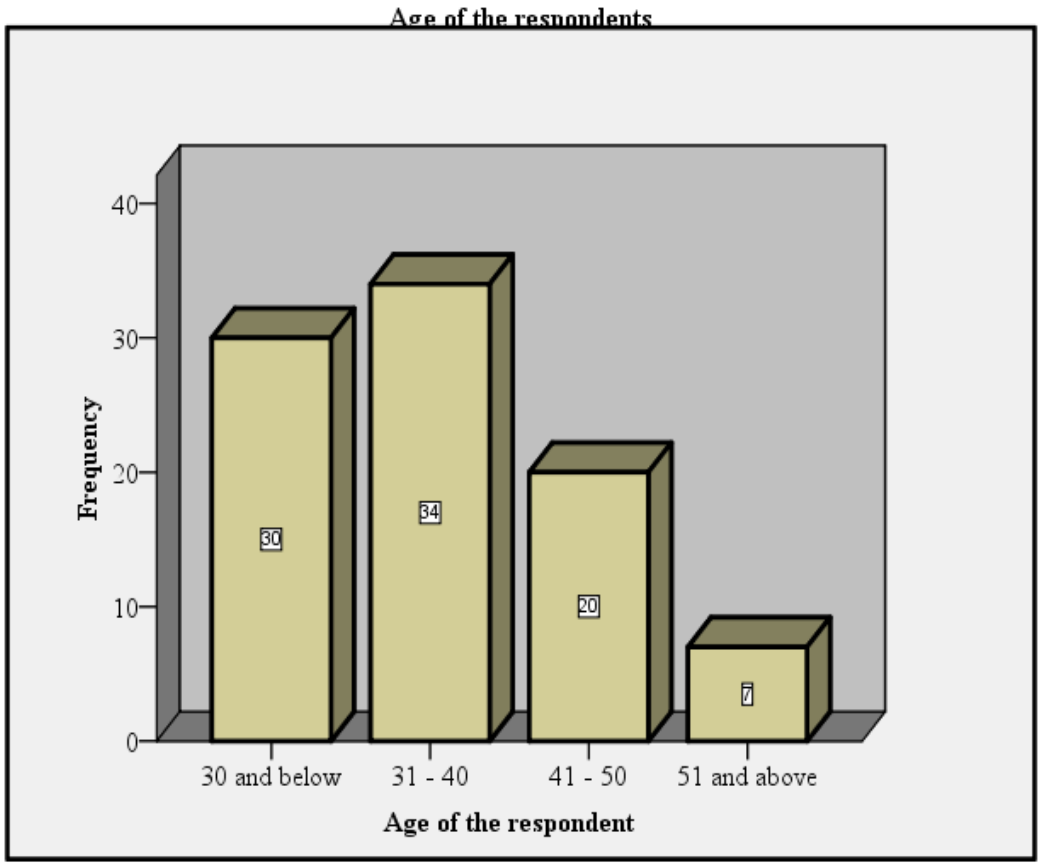


**Figure 1: Age of respondents**

**Source: Survey data, 2015**

Level of education of the internal auditors is another demographic variable that was captured during the survey. Figure 2 shows the highest educational qualification of respondents in this study. It is evident on Figure 2 that four (4) out the ninety-one (91) internal auditors who took part in the survey representing about 4.4% of the total respondents were first degree holders while thirty-one (31) of the internal auditors representing about 34.1% of the total respondents were masters degree holders. Figure 2 also pointed out that fifty-six representing about 61.5%

have professional qualifications. This shows that majority of the respondents have professional qualifications.

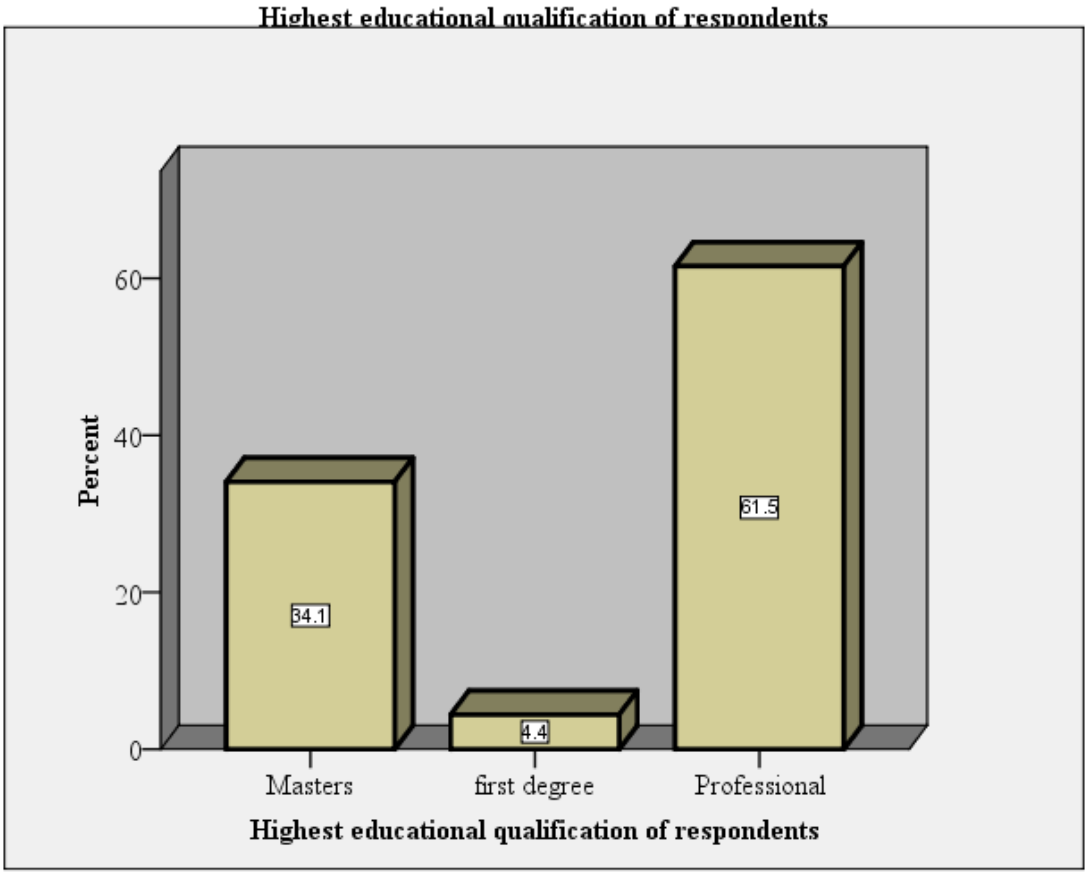


**Figure 2: Educational qualification of respondents**

**Multivariate Analysis of Variance in Internal Control Variables**

A One-way Multivariate Analysis of Variance (MANOVA) was used to examine whether internal auditors' scores on internal control variables-control environment, control activities, monitoring, information and communication and risk analysis are a function of the categories of insurance companies in which they work. The independent variable represented the reduced four

categories of insurance companies: 1) life only; 2) non-life only; 3) brokerage and 4) others (lost adjusters, reinsurance brokerage and reinsurance). The dependent variables were the internal auditors' scores on internal control variables.

Preliminary assumptions test which included normality, homogeneity of variance-covariance matrices, and correlation were performed. Kolmogorov-Smirnov/Shapiro-Wilks test was used to test for normality assumption. As there were fewer than fifty (50) internal auditors in each category of insurance companies, the Shapiro-Wilks outcome was resorted to. The outcome suggested that there appear to have a normal distribution as most groups had insignificant *p-values.* The Box's M test was used for testing homogeneity of variance-covariance matrices. This test had a significant *p-value* (0.000) indicating a violation of an assumption of homogeneity of variance-covariance matrices.

Nevertheless, haven violated this assumption, an appropriate multivariate test as well as post hoc test was resorted to. The Bartlett's Test of Sphericity was highly significant (*p-value*=0.000) suggesting that one or more of the dependent variables are correlated. Therefore, the study rejected the hypothesis of independence and concluded that dependent variables are correlated, hence the need for MANOVA. The means and standard deviations for each of the four groups are presented on Table 2. Table 2 shows that the Non-life insurance companies recorded the highest mean score on both Control Activities (M=.44, SD=.49), and Information and Communication (M=.20, SD=.51) while life insurance companies also recorded the highest score on monitoring variable (M=.11, SD=1.05). Brokerage firms recorded the highest score on both Control Environment (M=.15, SD=.95) and Risk and Analysis (M=.07, SD=1.07).

**Table 2: Means and Standard Deviation of Internal Control Variables Scores**

| *Categories of insurance companies* | | *Mean* | *Std. Deviation* | *N* |
|---|---|---|---|---|
| **CA** | **Life** | -.35 | .81 | 17 |
| | **Non-Life** | .44 | .49 | 26 |
| | **Brokerage** | -.01 | 1.12 | 43 |
| | **Others** | -1.06 | 1.36 | 5 |
| | **Total** | .00 | 1.00 | 91 |
| **M** | **Life** | .11 | 1.05 | 17 |
| | **Non-Life** | .09 | .63 | 26 |
| | **Brokerage** | .05 | .99 | 43 |
| | **Others** | -1.31 | 1.73 | 5 |
| | **Total** | .00 | 1.00 | 91 |
| **IC** | **Life** | .14 | 1.03 | 17 |
| | **Non-Life** | .20 | .51 | 26 |
| | **Brokerage** | -.07 | 1.12 | 43 |
| | **Others** | -.93 | 1.41 | 5 |
| | **Total** | .00 | 1.00 | 91 |
| **CEN** | **Life** | -.28 | 1.23 | 17 |
| | **Non-Life** | .11 | .73 | 26 |
| | **Brokerage** | .15 | .95 | 43 |
| | **Others** | -.97 | 1.34 | 5 |
| | **Total** | .00 | 1.00 | 91 |
| **RA** | **Life** | .05 | 1.16 | 17 |
| | **Non-Life** | .06 | .49 | 26 |
| | **Brokerage** | .07 | 1.07 | 43 |
| | **Others** | -1.16 | 1.27 | 5 |
| | **Total** | .00 | 1.00 | 91 |

**Where**: **CA** represents Total Control Activities scores;

**M** represents Total Monitoring score;

**IC** represents total information and communication score

**CEN** represents Total Control Environment score and

**RA** represents Total Risk Analysis score.

A more common criterion for a choice of test statistic in MANOVA is the degree to the test of statistic is robust against the violations of assumptions that underpin the use of the

approximate *F-test.* For *F-test* to be granted valid in MANOVA, it is assumed that (1) the samples were selected at random from the population (2) the observations are independent (3) the observations follow multivariate normal distribution and (4) the groups of any MANOVA factor have common within-groups variance-covariance matrices (Haase & Ellis, 1987). Carlo (as cited in Haase & Ellis, 1987) argued that Pillai's *V* is probably the most serviceable test statistic given its robustness under violations of underpinning assumptions in MANOVA. Since there are evidences of violations of some assumptions (independence and homogeneity of variances-covariance matrices), Pillai's *V* was used as the test statistic in this study. Alpha levels of .05 and 0.1 were used for all analyses.

There was a statistically significant difference among categories of insurance companies on the combined dependent variables: *F (15, 255) =2.970, p*=.000; Pillai's Trace =.446; partial eta squared=.149. The effect size (eta squared) of 0.149, indicated that approximately 14.9% of the variation in the combined internal control variables scores is attributable to differences between the four groups of insurance companies in Ghana. Table 3 shows result of the multivariate tests for group differences in internal control measures across categories of insurance companies in Ghana.

**Table 3: Multivariate Tests for Group Differences in Internal Control Measures across Categories of Insurance Companies**

| | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[b] |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Pillai's trace** | .446 | 2.970 | 15.000 | 255.000 | .000 | .149 | 44.548 | .997 |
| **Wilks' lambda** | .614 | 2.954 | 15.000 | 229.528 | .000 | .150 | 40.484 | .993 |
| **Hotelling's trace** | .534 | 2.909 | 15.000 | 245.000 | .000 | .151 | 43.633 | .996 |
| **Roy's largest root** | .267 | 4.542[a] | 5.000 | 85.000 | .001 | .211 | 22.711 | .964 |

It must be noted that the above multivariate test (Pillai's V) only shows the main effect of the independent variable (categories of insurance companies) on the combined dependent variables-Total Control Activities Score, Total Information and Communication Score, Total Control Environment Score, Total Monitoring Score, and Total Risk Analysis Score. In other to show which of the dependent variables contributes to the overall main effect or significance, the univariate analysis was also conducted. Table 4 shows the result of the univariate analysis. From Table 4 below, the Control Activities and Monitoring Contributed to the main effect at 5% level of significance. Even though, Control Environment and Risk Analysis also contributed to the main effect, they were only significance at 10% level of significance.

**Table 4: Univariate Tests for Group Differences in Internal Control Measures across Categories of Insurance Companies**

| *Source* | *Sum of Squares* | *df* | *Mean Square* | *F* | *Sig.* | *Partial Eta Squared* |
|---|---|---|---|---|---|---|
| **Contrast CA** | 12.833 | 3 | 4.278 | 4.823 | .004 | .143 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **M** | 9.103 | 3 | 3.034 | 3.263 | .025 | .101 |
| | **IC** | 5.954 | 3 | 1.985 | 2.054 | .112 | .066 |
| | **CEN** | 7.413 | 3 | 2.471 | 2.603 | .057 | .082 |
| | **RA** | 7.129 | 3 | 2.376 | 2.495 | .065 | .079 |
| **Error** | **CA** | 77.167 | 87 | .887 | | | |
| | **M** | 80.897 | 87 | .930 | | | |
| | **IC** | 84.046 | 87 | .966 | | | |
| | **CEN** | 82.587 | 87 | .949 | | | |
| | **RA** | 82.871 | 87 | .953 | | | |

It was also of interest to show whether the significant main effect as depicted by the Pillai's Trace is actually due to a single category of insurance company while all of the other groups are not significantly different or due to more categories of insurance companies. Hence, the Post-hoc comparisons using the Bonferroni post hoc test was also conducted. Bonferroni post hoc test was performed since it is deemed as the appropriate test when assumption of homogeneity of variance-covariance matrices is violated. This is because, its derivation does not base on the assumption of equal sample sizes in addition to homogeneity of variance and normality of error (SPSS Inc., 2000). The Bonferroni post hoc test result is shown in Table 5 below.

**Table 5: Bonferroni Post Hoc Comparisons for Individual Group Differences on Internal Control Measures across Categories of Insurance Companies**

| ***Dependent Variable*** | | | ***Mean Difference (I-J)*** | ***Sig.*** |
|---|---|---|---|---|
| **CA** | **Life** | **Non-Life** | -.791** | .051 |
| | | **Brokerage** | -.340 | 1.000 |
| | | **Others** | .717 | .827 |
| | **Non-Life** | **Life** | .791 | .051 |
| | | **Brokerage** | .450 | .345 |

| | | | | |
|---|---|---|---|---|
| | | **Others** | 1.508* | .009 |
| | **Brokerage** | **Life** | .340 | 1.000 |
| | | **Non-Life** | -.450 | .345 |
| | | **Others** | 1.058 | .118 |
| | **Others** | **Life** | -.717 | .827 |
| | | **Non-Life** | -1.508* | .009 |
| | | **Brokerage** | -1.058 | .118 |
| **M** | **Life** | **Non-Life** | .016 | 1.000 |
| | | **Brokerage** | .059 | 1.000 |
| | | **Others** | 1.418* | .029 |
| | **Non-Life** | **Life** | -.016 | 1.000 |
| | | **Brokerage** | .043 | 1.000 |
| | | **Others** | 1.402* | .023 |
| | **Brokerage** | **Life** | -.059 | 1.000 |
| | | **Non-Life** | -.043 | 1.000 |
| | | **Others** | 1.359* | .022 |
| | **Others** | **Life** | -1.418* | .029 |
| | | **Non-Life** | -1.402* | .023 |
| | | **Brokerage** | -1.359* | .022 |
| **IC** | **Life** | **Non-Life** | -.058 | 1.000 |
| | | **Brokerage** | .214 | 1.000 |
| | | **Others** | 1.074 | .207 |
| | **Non-Life** | **Life** | .058 | 1.000 |
| | | **Brokerage** | .272 | 1.000 |
| | | **Others** | 1.133 | .123 |
| | **Brokerage** | **Life** | -.214 | 1.000 |
| | | **Non-Life** | -.272 | 1.000 |
| | | **Others** | .861 | .403 |
| | **Others** | **Life** | -1.074 | .207 |
| | | **Non-Life** | -1.133 | .123 |
| | | **Brokerage** | -.861 | .403 |

**Table 5: cont'd**

| | | | | |
|---|---|---|---|---|
| **CEN** | **Life** | **Non-Life** | -.393 | 1.000 |
| | | **Brokerage** | -.432 | .752 |
| | | **Others** | .696 | .985 |
| | **Non-Life** | **Life** | .393 | 1.000 |
| | | **Brokerage** | -.039 | 1.000 |

| | | | | |
|---|---|---|---|---|
| | | **Others** | 1.088 | .148 |
| | **Brokerage** | **Life** | .432 | .752 |
| | | **Non-Life** | .039 | 1.000 |
| | | **Others** | 1.128** | .098 |
| | **Others** | **Life** | -.696 | .985 |
| | | **Non-Life** | -1.088 | .148 |
| | | **Brokerage** | -1.128** | .098 |
| **RA** | **Life** | **Non-Life** | -.012 | 1.000 |
| | | **Brokerage** | -.016 | 1.000 |
| | | **Others** | 1.217** | .098 |
| | **Non-Life** | **Life** | .012 | 1.000 |
| | | **Brokerage** | -.004 | 1.000 |
| | | **Others** | 1.229** | .070 |
| | **Brokerage** | **Life** | .0157 | 1.000 |
| | | **Non-Life** | .004 | 1.000 |
| | | **Others** | 1.232 | .054 |
| | **Others** | **Life** | -1.217** | .098 |
| | | **Non-Life** | -1.229** | .070 |
| | | **Brokerage** | -1.232** | .054 |

***P<0.05** ****P<0.10***

Albeit, the main effect is significant, Table 4 shows that the differences between adjacent groups are not the same. Examination of Control Activities Score (CA) discloses that the mean difference between life insurance companies and non-life insurance companies is -.791 and it is statistically significant at 10% level of significance (*P-value=0.051*). The negative sign means that the mean value of life insurance is lower than that of non-life insurance companies. The implication is that the non-life insurance companies are more likely to implement adequate control activities measures than life insurance companies. There is also a statistically significant difference between non-life group and others (brokerage reinsurance, reinsurance and lost adjusters) at 5% alpha level (*MD=1.508, P-value=0.009*). The positive sign indicates that non-life group has the higher mean value. The implication is that the non-life insurance companies

are more likely to implement adequate control activities measures than others (brokerage reinsurance, reinsurance and lost adjusters).

Considering Monitoring Score (M), there is a significant mean difference between life group versus others (*MD=1.418, P-value=0.029)* at an alpha level of 5%. The positive sign implies that life group has the higher mean value. This suggests that the life insurance companies are more likely to implement adequate monitoring measures than others (brokerage reinsurance, reinsurance and lost adjusters).There is also a statistically significant difference between non-life group and others (brokerage reinsurance, reinsurance and lost adjusters) (*MD=1.402, P-value=0.023*). Furthermore, the group difference between brokerage versus others is statistically significant at 5% level of significance (*MD=1.359, P-value=0.022*).

The post hoc comparison for Information and Communication however shows an insignificant difference in the mean scores across adjacent groups. A similar result is obtained for Control Environment except for brokerage group and others where a significant difference is observed between them. Nevertheless, such a difference is only significant at 10% alpha level (*MD=1.128, P-value=0.098*). On the issue of Risk Analysis, some significant differences are observed across adjacent groups but are only significant at 10% alpha level: life group versus others (*MD=1.217, P-value=0.098*); non-life group versus others (*MD=1.229, P-value=0.070*); and brokerage versus other (*MD=1.232, P-value=0.054*).

**Conclusions and Recommendation**

Based on the findings of the study, it can be concluded that categories of insurance companies have effect on internal control measures that are implemented. It was disclosed by the

study that non-life insurance companies are more likely to implement adequate control activities measures than life insurance companies and others (brokerage reinsurance, reinsurance and lost adjusters). The study also revealed that life insurance companies, non-life insurance as well as brokerage firms are more likely to implement adequate monitoring measures than others (brokerage reinsurance, reinsurance and lost adjusters). It is therefore recommended that National Insurance Commission should pay much attention to brokerage reinsurance, reinsurance and lost adjusters firms in ensuring implementation of internal control measures and good governance practices.

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